



HARRISONS, RAMSAY PROPTY, LTD.



CRITTALL STANDARD METAL WINDOWS



Windows from Stock
All the qualities of the Best Metal Casement
To replace the unsatisfactory Wooden Windows
At Less Cost

CRITTALL MANUFACTURING CO. LTD. BRAINTREE. ENGLAND.

TELEPHONES — BRAINTREE 106 — LONDON, HOLBORN 326, 327 AND 723
TELEGRAMS — CRITTALL, BRAINTREE — CRITMANCO, HOLB, LONDON, U.O. LONDON OFFICE AND SHOWROOMS — 246 HICH HOLBORN, LONDON, W.C.I. MANCHESTER, CIPICE AND SHOWROOMS — 3 GRANBY STREET, LEICESTER OFFICE AND SHOWROOMS — 3 GRANBY STREET, LEICESTER GLASGOW OFFICE AND SHOWROOMS — 28, ROYAL EXCHANGE SC, CLASGOW, NEWCASTLE-ON-TYNE OFFICE & SHOWROOMS — SO GRAINGER STREET

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INTRODUCTION

WE have endeavoured in this catalogue to set out full particulars of the various ranges of Standard Window Productions which we manufacture. Roughly they may be classified under the following headings:

- Standard Metal Windows, Outward and Inward Opening types.
- 2. Wood Surrounds for Standard Metal Windows.
- 3. Bay Windows.
- 4. Standard French Windows.
- 5. Standard Sashes.
- 6. Metal Partitions.

It will be found that this range of Standard Windows will cover all requirements for practically every class of building, and the fact that they are standardized has enabled us to produce them at a very low cost, and in all cases the prices will be found to be considerably below that of a similar window in wood.

Our methods of manufacture have enabled us to concentrate upon the quality of the workmanship which will be found to be equal in every way to our purpose made Universal Casements.

We hold a very large stock of these windows, and are able to guarantee prompt delivery of practically every type shown in this book.

CRITTALL

STANDARD METAL WINDOWS

Fixing Instructions

CRITTALL STANDARD METAL WINDOWS are very easily fixed, but it is impossible to construct a window which cannot

be spoiled by bad fixing.

The more usual fixing details are shown in this catalogue (see pages 12-17, and 50-53). They have been tried out over a period of years and have proved to be sound from every point of view. To ensure satisfactory results these details must be carefully followed.

IMPORTANT

WEATHERING AT HEAD. To ensure weather tightness, the metal frame should be fixed as far back in the opening as possible, minimum $2\frac{1}{4}$ " from the face of the wall. This will enable a throating to be formed in the lintol, or head of the opening. When for any reason the throating is omitted, a metal weather bar can be supplied at a small extra cost.

SLOPING CILLS. It is essential to see that the slope of the cill is as steep as possible and that it falls directly from the edge of the metal frame. Any flat surface on the cill provides a lodgment whence water may be blown back against the window in bad weather.

MASTIC POINTING. All fixing details depend largely for their efficiency upon being properly pointed after erection with mastic. The coupling bars and pipe mullions of all composite windows should be pointed inside and outside after fixing. Crittall Mastic Cement can be supplied in 14 and 28 lb. tins complete with all instructions ready for use.

FIXING HOLES IN CILLS. Where lugs cannot be used at the cill, grout should be poured in through the fixing holes and fixing screws placed in them.

ROUGH CAST WALLS. When this detail is used, it is preferable to use the wide flange frame and this provides a greater depth to accommodate the plaster. Care must be taken to keep the plastering and pebble dashing free of the opening frame.

PAINTING. Care is taken that Crittall Standard Metal Windows are freed from rust and scale before being dipped two coats of zinc oxide priming paint. In case the paint should be damaged in transit of erection, it is necessary to see that all signs of rust are removed before applying the finishing coats, which may be of any good quality paint.

GLAZING

GLAZING. Glass must never be put against the metal rebate. A thin layer of putty should be spread over the metal rebate and the glass pressed firmly against it.

Glazing spriggs are not necessary for small panes, but should be used for the no glazing bar types, and these windows are prepared for

the same.

Where no glazing bars are used, the weight of the glass should be thrown on the lower hinge corner by means of small wood wedges,

placed between the glass and the metal frame.

PUTTY. Ordinary glazier's putty is not suitable for glazing metal windows as the steel frame will not absorb the excessive quantity of oil. It is necessary to see that only linseed oil is used (in sufficient quantity to allow the putty to be worked without being sticky). A little mastic or red lead mixed with the putty will assist quick setting and add to its strength and permanence.

GENERAL NOTES

UNLOADING. Windows are never sent in larger bundles than 8 cwts. Where there are no facilities for handling such a bundle the splines should be removed in the truck, and the windows transferred to a lorry or cart one at a time.

HANDLING. Windows must be carried, not dragged along the

ground, as this damages the priming coat.

STORAGE. All windows must be stacked on edge; never lay them horizontally. Care should be taken with composite windows to see that the coupling screws are not strained.

It will pay to stack windows on wooden splines.

Store under cover and in a dry place.

See that in stacking windows the fittings of one window are clear

of the window next to it.

ERECTION. Except in cases where windows are built in, they should be left until all the rougher trades have left the site and the openings are ready for glazing.

The frames are not designed to carry any weight at the head.

Care must be taken to see that the windows are not damaged by placing scaffold boards on the cills, or glazing bars, or by drawing

heavy objects through the openings.

CONDENSATION. All new buildings are subject to condensation and until all water that has been used in building the house has evaporated, this will continue. In order to get rid of this as quickly as possible all ventilators should be kept partially open on the night latch, as soon as they are glazed. A continuous supply of fresh air is the best drying medium.

STANDARD METAL WINDOWS

SPECIFICATION

CONSTRUCTION. The frames are made of rolled steel bars, the corners being oxy-acetylene welded (no electric welding is used). The opening frame is of a specially heavy section. The Fenestra system is used for interlacing the Tee Glazing Bars, which are prepared to glaze from outside.

OPENING LIGHTS. All Opening Lights are hinged at side or top to open outwards. All side-hung types are made handed. The hinges are of solid rolled steel sections rivetted to the frame. The pins are of phosphor bronze.

For Inward Opening types of the same size (see pp. 34 & 35).

CLEANING HINGES. Projecting Hinges, giving a space of about $4\frac{1}{2}$ " between the fixed and opening frames when open, to permit cleaning from inside, are provided when called for, without extra charge.

FITTINGS. Pressed Steel Handle Plate with stop and Stay Bracket are rivetted to the face of the opening frame, the fixed frame being pressed out to clear them.

Handle with night ventilating notch engaging with drawn gunmetal striking plate.

Peg Stay of channel section engaging with tapered Peg rivetted to the frame.

Non-projecting Stays can be provided if desired.

Night Ventilators (F Type) hung on extruded gunmetal hinge and fitted with drop down stay.

Detachable curtain rod brackets of rolled section.

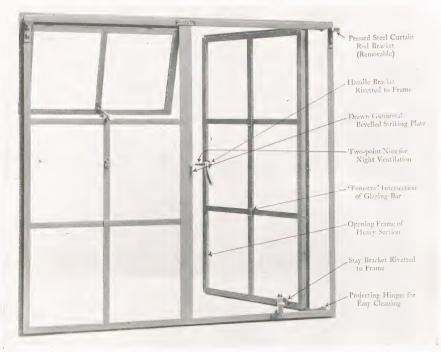
All necessary fixing screws and lugs provided.

FINISH. Dipped one coat of paint before assembly and one after.

WE DO NOT ENAMEL OUR WINDOWS.

INTERIOR VIEW OF THE NEW CRITTALL STANDARD METAL WINDOW

OUTWARD OPENING TYPE (C2 F)





FIXING DETAIL TO BRICKWORK

FITTINGS

THE FITTINGS on the new Standard Metal Window are of a more substantial pattern than those previously used. They are made of malleable iron, with gunmetal working parts, and to avoid the possibility of breaking associated with welded-on fittings, all brackets are power rivetted to the frame.

All Standard Fittings can be supplied in solid bronze at a small extra cost.



THE HANDLE is provided with twopoint nose, and engages with a bevelled bronze striking plate.

A stop is provided to prevent it being turned beyond the correct position.



THE PEG STAY is of channel section, and of great strength. It engages with a tapered peg rivetted to the fixed frame, to ensure that there will be no rattling. The brackets are rivetted to the frames to avoid risk of breakage.

FITTINGS



SLIDING STAYS

WHERE flyscreens are used, or where internal projection is undesirable, non-projecting sliding stays can be fitted at a small extra cost. These must be specially called for.



NIGHT VENTILATOR STAY

F. TYPE ventilators are fitted with this type of stay which is easily operated. The clip which is rivetted to the glazing bar ensures the ventilator remaining firmly closed.



CURTAIN ROD BRACKETS

THESE are of the detachable pattern and are sent loose with every consignment. They hold the curtain about 2" away from the window, thus preventing the curtain getting damp through condensation, by being in too close contact with the glass.

HINGES

THE Hinges used on Standard Metal Windows are neat in appearance, and of substantial design and are power rivetted to the frames, the hinge centres being made of gunmetal. To ensure perfect alignment, both top and bottom centres are drilled simultaneously.



Gunmetal
Hinge Pin
Wrought Steel
Fixed Leaf
Wrought Steel
Opening Leaf
Rivets power
headed



Steel Ball Bolt Gunmetal Pin Gunmetal Opening Leaf Rivets power headed

The opening leaf of the Top Hung Hinge is made of extruded gunmetal, whilst the fixed portion is a steel bolt.

CLEANING HINGES

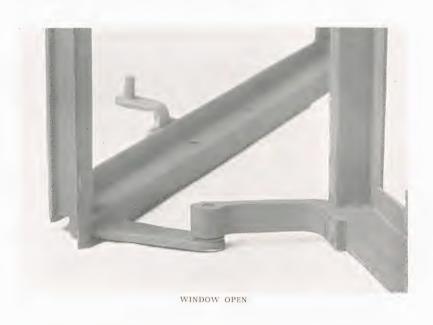


INTERIOR VIEW

THE cost of cleaning upper storey windows when the casements open outwards amounts to a considerable item annually where this cannot be done from inside by the tenant.

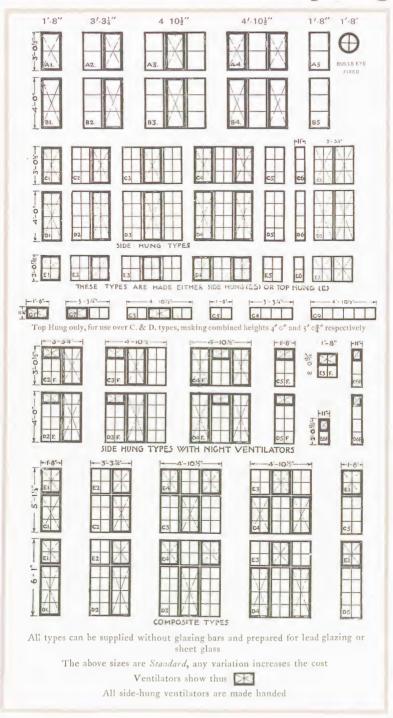
This expense can be saved by the use of projecting hinges, which will be supplied without extra charge when called for. There are no working parts to get out of repair, or become clogged by subsequent coats of paint, and the housewife can clean all windows without danger or difficulty.

Where projecting hinges are required they must be specially called for.



THE CRITTALL MANUFACTURING CO. LTD., BRAINTREE

Standard Sizes. Outward Opening



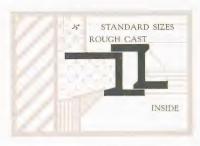
WIDER FRAMES



DETAIL No. 11

AN alternative frame section is used in cases where a rather heavier appearance is required than is provided by the standard sections. This provides a total width of frame of approximately two inches and increases the standard dimensions of each unit by one inch in height and width.

The extended outer flange can be used as an extra weather check against the masonry in exposed positions, as shown in details IIA and IIB. The short inner leg allows the channel to be properly filled with cement which can be finished with a wood cover-mould if desired.



DETAIL No. 11 A



DETAIL No. 11 B

CAVITY WALLS

WHERE good facing bricks are obtainable, walls are usually constructed with a 2" cavity, the metal frame being fixed in the middle of the outer wall. In order to obtain the best results with this method of construction, care should be taken to see that there is as little contact as possible between the inner and outer wall, as otherwise the inner wall, which is dry, will absorb the moisture from the outer wall. The method shown on the opposite page of closing the cavity has been found to be quite successful in this respect.

FIXING INSTRUCTIONS

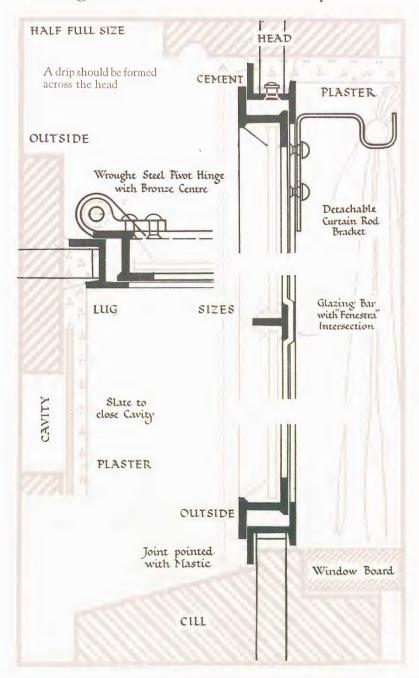
'BUILD THEM IN'

- 1. Attach lugs and stand frame upon cill. Adjust carefully, to see that the frame opens and closes properly.
- 2. When accurately adjusted, shut and wire the ventilators, and strut the frame securely, so that it cannot be moved.
- 3. As the brickwork proceeds, see that the channel of the metal frame is well filled with cement to make a good joint.
- 4. No weight must be allowed to rest on the metal frame when placing the lintol or brick arch.
- 5. When the opening is complete, the external joint should be raked out and pointed with mastic. The slate damp-course closing the cavity should be applied immediately before the plaster, and should be set in cement.

Crittall Mastic Cement can be supplied in 14 and 28 lb. tins complete with all instructions ready for use.

Fixing Details.

Cavity Walls



ROUGH-CASTING

AS an alternative to brick-faced buildings, pebble dashing or other forms of external rendering are often adopted. The details on the opposite page show the correct method of installing Standard Metal Windows in such buildings.

Particular attention is drawn to where the sizes are given. An allowance of about 1 in. all round must be made for the external finish of the plaster.

An alternative to returning pebble dashing (i.e. rough-casting) into the reveal is to finish the reveal in neat cement. This makes a sound weatherproof finish, and the cement can be painted the same colour as the metal frame, to give the effect of a wide outside frame, the absence of which is sometimes used as an argument against using metal windows.

With this method of installation there is not the same advantage in building frames in, as when they come in direct contact with the surrounding brickwork (see detail for Cavity Walls, page 13). They may be built in if desired, but care must be taken to see that they are not put out of alignment before the final cement fillet is applied.

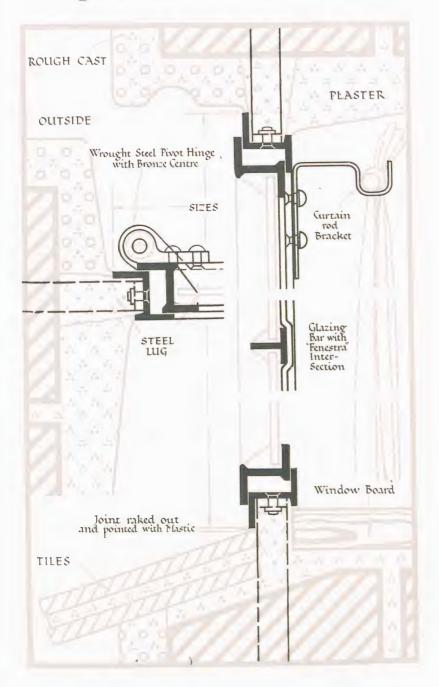
FIXING INSTRUCTIONS

- 1. Attach lugs to the frame and knock out bricks which come opposite to them, so that the lugs are free from the masonry.
- 2. Stand the windows upon wooden blocks and carefully adjust with wedges, and see ventilators open and close correctly.
- 3. When adjusted, fix the lugs in cement, and, when well set, remove the blocks. Fill in the space between the masonry and the frame with cement, being careful to see it is well tamped into the channel of the metal frame.
- 4. When external tile cills are used, the tiles should first be laid, and when set, grout should be poured through the fixing holes, and fixing screws placed in them.
- 5. When the cement is well set the external and internal plaster can be applied.

Crittall Mastic Cement can be supplied in 14 and 28 lb. tins complete with all instructions ready for use.

Fixing Details.

Plaster Walls



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FRAMED OPENINGS

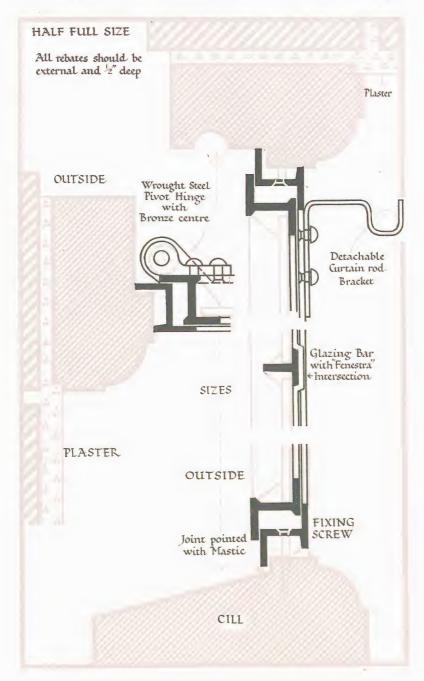
WHEN framed openings are used in wood, stone, or artificial stone, they should be prepared with a $\frac{1}{2}$ -in. external rebate all round, as shown on the opposite page.

FIXING INSTRUCTIONS

- 1. Do not force a window into an opening too small to receive it. Cut away the surrounding work until the window will go freely into position.
- 2. In stone, brick, or artificial stone openings, mark off the position of the fixing holes, and having cut the holes, insert elm plugs.
- 3. Fill the channel of the frame with mastic, and press the window against the rebate.
- 4. Screw the casement to the plugs (or wooden frame), taking care not to distort it by driving the screws in too tightly, then trim off the mastic, and point firmly into the external and internal joint.

Crittall Mastic Cement can be supplied in 14 and 28 lb. tins complete with all instructions ready for use.

Fixing Details. Framed Openings



THE CRITTALL MANUFACTURING CO. LTD., BRAINTREE

LEAD GLAZING FOR STANDARD METAL WINDOWS



THE increasing amount of better-class domestic building, coupled with the popularity of the Standard Metal Window, has led us to standardize Lead Glazing. By confining ourselves to a range of standard sizes, we are able to produce this at an extremely low figure.

All sizes are kept in stock and immediate delivery can be relied upon. No leaded light is despatched that has not been in stock at least three weeks. This ensures that the cement in which the glass is bedded is properly set.

Crittall Standard Leaded Glass is of the highest quality, and we are prepared to enter into any reasonable guarantee as to its efficiency.

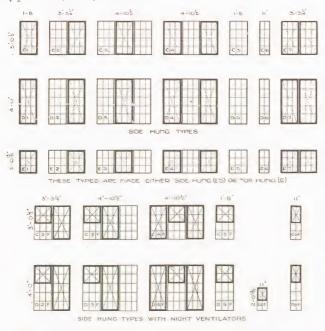
SPECIFICATION

For Crittall Standard Lead Glazing

LEAD GLAZING of sheet glass in squares approximately $8'' \times 6''$ with $\frac{1}{2}''$ flat beaded cames, reinforced with steel cores where required. No saddle bars are necessary.

Included in the range of standard sizes are three single panels to fix direct to wood frames. Size 4' 0" \times 1' 8" (XD); Size 3' $0\frac{1}{2}$ " \times 1' 8" (XC); Size 2' $\frac{13}{16}$ " \times 1' 8" (XE).

They are for use in mullioned openings in conjunction with types C1, D1, and E1.



All other lead glazed panels are known by the type number of the Standard Metal Windows into which they are fixed; that is to say, in specifying lead glazing it is only necessary to mention the type number of the window for which the glazing is required.

Special sizes, designs and quality of glass can be substituted, but any deviation from the standard specification considerably increases the cost and causes delay.

STANDARD METAL WINDOWS

OUTWARD OPENING TYPES

TYPE	STANDARD SIZES OF GLASS & NUMBERS OF PIECES					
A 1 A 2 A 3 A 4 A 5 B 1 B 2 B 3 B 4 B 5	1'4 16" × 1'5 16" 2 2 2 4	1' 5\frac{1'' \times 1' 6\frac{3'''}{8'''} \\ 2 \\ 4 \\ 2 \\ 2 \\	I' 25/8" × I' 5 16" 2 2 2 4	I' 3 ¹ / ₄ " × I' 5 ³ / ₁₆ "	1' 3\frac{1}{8}" \times 1' 6\frac{3}{8}" \times 6 \times 3 \times 6 \times 3 \times	
TYPE C 1 C 2 C C 3 C C C C D 2 D D 4 D D 5 D D 7 E E 2 E 5 E 5 E 7	10 \frac{13}{16}" \times 8 \frac{7}{16}" 4 4 4 8 8 8 4 4 4 8 8 8 4 4 8 8 8 8 8	113 "×8 76" 2 2 2 4 4 4 4 8 8	6 11 ³ / ₈ "×9 ¹ / ₁₆ " 6 12 6 6 3 8 16 8 8 4			
TYPE C 2f C 3f C 4f C 5f C 6f D 2f D 3f D 4f D 5f D 6f E 6f	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	113"×916" 4 10 4 4 2 6 14 6 3 1	10 \frac{13}{16}" \times 8 \frac{7}{16}" 4 4 8 4 4 8 4 4 8 8	113"×8 76" 2 2 4 4 8	10 16" × 8 16" 1	

Note.—Above are dead sizes of glass. Allowance has been made for going in.

STANDARD METAL WINDOWS

WITHOUT GLAZING BARS

TYPE	STANDARD SIZES OF GLASS & NUMBERS OF PIECES					
C 1 C 2 C 3 C 4 C 5 C 6 C 7	2'9 16" × 1'5 36" 1 1 1 2		2' 10 號"×1' 6 號" I 2 I I		2' 10 16"×9 16"	
TYPE D I D 2 D 3 D 4 D 5 D 6 D 7		× 1′ 5 16″ 1 1 1 1 2	:	× 1′ 6 ½″ 1 2 1	3' 10 16"	×9 ½"
TYPE E 1 E 2 E 3 E 4 E 5 E 6 E 7	I' IO" × I' 5 ½" I I I 2		1' 11\frac{1}{8}" \times 1' 6 \frac{5}{16}" 1 2 1 1		1' 11\frac{1}{8}" \times 9 \frac{5}{16}"	
C 2f C 3f C 4f C 5f C 6f	2'9 16" × 1'5 16" 1 1 2	1'3 16"× 1'5 16" 1 1 1	1' 5\frac{3}{4}" \times 1' 6 \frac{5}{16}" \times 1 \times 1 \times 1 \times 1 \times 1	2'10 16"X 1'6 16"	I' 3 16"× 8 16"×	1'5\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
D 2f D 3f D 4f D 5f D 6f	3' 9 36" × 1' 5 36" 1 1 2	1' 5"× 1' 5 36" 1 1 1	2' 3 ½" × 1' 6 ½" × 1' 6 ½" 1 I I I I	3' 10 5 "X 1' 6 5 "	1'5"× 8 3"	2' 3 ½" × 9 ½" ×
TYPE E 6f	10 ½"× 8 ¾" 1	113"× 9 5" 1				

Note.—Above are dead sizes of Lead Glazing Panels or Sheet Glass. Allowance has been made for going in.

WOOD SURROUNDS FOR STANDARD METAL WINDOWS

(PATENT APPLIED FOR)



EXTERIOR VIEW OF C2 F IN WOOD SURROUND

HITHERTO we have been opposed to the practice of fixing Standard Metal Windows into wood frames for two reasons: (1) That the unstaple nature of available building timber has led to complaints of leakage which have been unfairly charged against the metal window. (2) That the cost of installation would be greatly increased by the addition of the wooden framing. There is no doubt that metal fixed direct to the brickwork with a cement joint pointed with mastic is really the soundest and most permanent method. There are, however, certain advantages in having the metal window mounted in a wooden surround, and we have devised a method of doing this without unduly increasing the cost.

In the first place, the metal window has a more substantial appearance when so treated. The Standard Metal Window is often criticized as looking mean when installed direct to the surrounding brickwork, and the wooden surround answers this objection. Secondly, there is no doubt that it is much easier to fix the metal window when it is provided with a wood surround; it reinforces the metal frame against distortion and is easier to adjust.

Our method retains the idea of the metal casement and frame. We do not recommend the method of hinging a metal casement direct to the woodwork, even when shutting against metal strips. Our experience has shown us that this method is unreliable, because the strips are apt to move and get out of alignment with the metal frame, with which they are supposed to make contact, on account of the shrinking and twisting which is invariably associated with present-day joinery. Our proposals include a complete casement and frame fixed into the rabbetted wood surround, so that a certain amount of shrinkage, swelling or distortion can take place without affecting the efficiency of the window.

SPECIFICATION

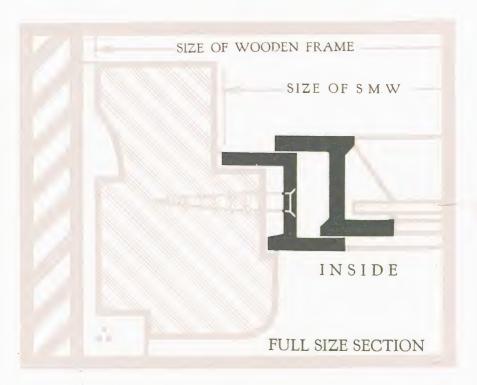
THE Wood Surround which we are supplying with our Standard Metal Window has a continuous groove or 'frog' formed in the face which comes in contact with the masonry, so that in case of the wood shrinking, the cement in which the window is bedded will form a weather check and break the joint.

The *head* is throated so as to form a drip, and thus prevents rain-water being blown against the metal contacts.

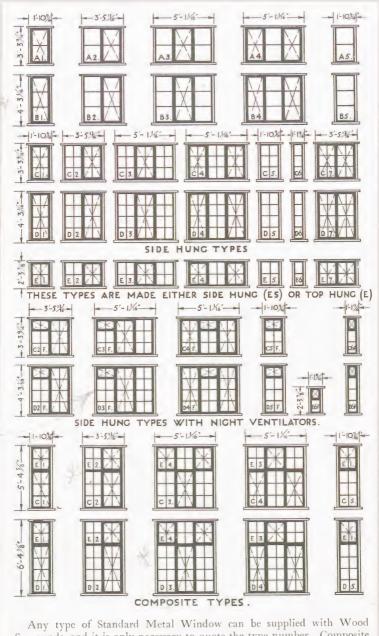
The *jambs* are of a similar section, except that they are rounded on the inside arriss. The cill is of oak and provided with an ample fall from the bottom of the metal frame, so that water will not rest there. The underside of the cill is throated to form a drip. The head, jambs, and cill are provided with a groove on the inside to house plaster or wood linings.

The greatest care is taken in selecting the material from which these surrounds are made, and the metal frames are bedded in mastic cement before fixing into the wood rebates. The ends of the heads and cills are splayed so as to form a fixing lug into the brickwork.

A further advantage of the wooden surround is that it provides an easy fixing for screws and brackets, for, although curtain rod brackets are provided on the metal window, it is often found that it is desirable to alter their position.



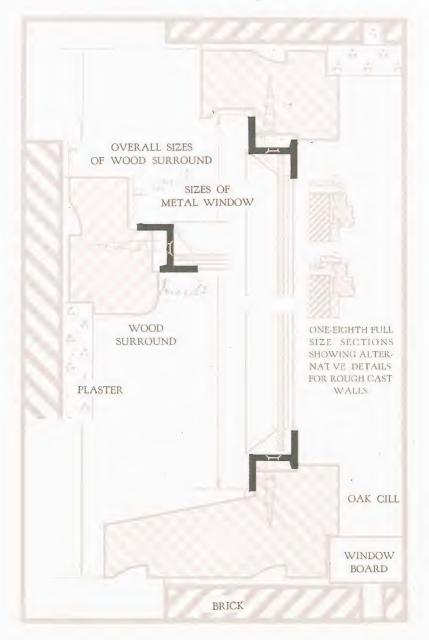
WOOD SURROUNDS



Any type of Standard Metal Window can be supplied with Wood Surrounds, and it is only necessary to quote the type number. Composite windows consisting of any two units in height and width are also stocked.

Fixing Details. Wood Surrounds

The Heads and Jambs are of $3'' \times 2''$ deal. The Cill is of $5'' \times 2\frac{1}{2}''$ oak.

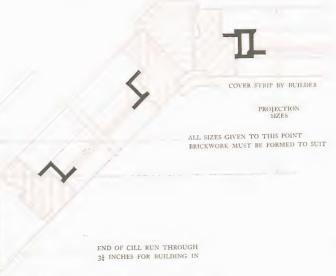


BAY WINDOWS AND WOOD SURROUNDS

BAY Windows can be formed by this method, and wood mullions are stocked for all types to produce bays of 30°, 45°, 60°, and 90° angles.

It will be seen that this wood making up piece, which is delivered attached to the middle portion, makes a perfectly sound job, any possibility of defects through shrinkage being avoided by the rabbetted mullion. It is only necessary for the builder after erecting the bay, to put a small cover strip on the inside to finish off.

	11 ¹¹ / ₁₆ " proj.	1-4 ½ " proj.	1-916" proj.	2-1½" proj.
ONE LIGHT WIDE with single side lights	$5' 4\frac{11}{16}''$	$4' 10\frac{3}{4}''$	$4'$ $2\frac{3}{16}''$	2' + 76"
TWO LIGHTS WIDE with single side lights, as types B.A. & B.B.	6' 11 15 "	6' 6"	5′ 9 76″	3' II 11 "
THREE LIGHTS WIDE with single side lights, as types B.C., B.E., B.D., B.F., B.F.A., & B.G.	8' 7 3 "	8' 11"	$7' + \frac{11}{16}"$	5' 6 15 "
FOUR LIGHTS WIDE with single side lights	10' 3 3 "	$9' 9\frac{1}{4}''$	$9' \circ \frac{11}{16}''$	$7'$ $2\frac{15}{16}''$
FIVE LIGHTS WIDE with single side lights	$11' 11 \frac{3}{16}"$	11' 51"	$10' 8 \frac{11}{16}''$	8' 10 15 "



ONE QUARTER FULL SIZE

BAY WINDOWS



HOUSE AT DEGANWY

Architects: T. A. Fitton & Son

ON the preceding page we have given details showing Bay Windows in Wood Surrounds mounted in wood frames, with wood corner posts. Where windows are not fixed in wooden surrounds a tubular mullion is used in place of the wood corner post. By this method any angle of Bay Window can be supplied.

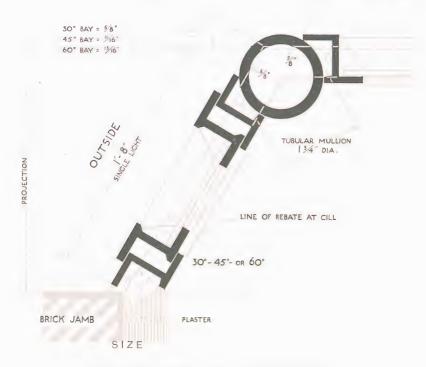
On the following pages will be found various types of Bay Windows built up from standard size units, but should these designs not be what is required, we shall be pleased to furnish alternative suggestions.

BAY WINDOWS

HALF SIZE DETAILS OF BAY WINDOWS

LINE OF REBATE AT CILL

STANDARD UNITS
1, 2, 3, 4 OR 5 LIGHTS WIDE



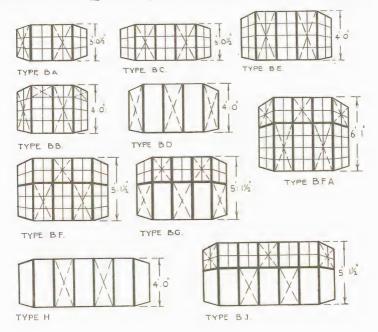
BRICK OPENING WIDTHS FOR SPLAYED BAY WINDOWS

	30°	45°	60°
ONE LIGHT WIDE with single side lights.	4' 8 <u>3</u> "	+' 2½"	3' 63"
TWO LIGHTS WIDE with single side lights, as types B.A. & B.B.	6' +"	$5' 9\frac{3}{4}''$	5' I \(\frac{5}{8}\)"
THREE LIGHTS WIDE with single side lights, as types B.C., B.E., B.D., B.F., B.F.A. & B.G.	7' II <u>1</u> "	7′ 5″	6' 8 7 "
FOUR LIGHTS WIDE with single side lights.	9' 74"	9′ 1″	8' 48"
FIVE LIGHTS WIDE with single side lights, as types B.H. & B.J.	$11' 3\frac{1}{4}''$	10' 9"	10' 07"

SPLAYED BAYS



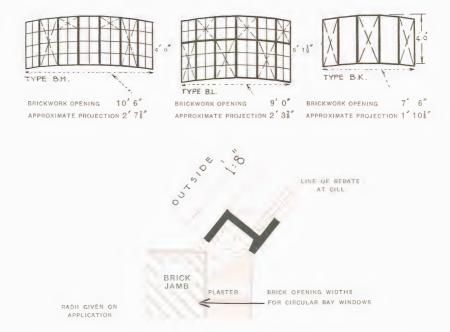
Portions marked thus [X] indicate opening portions which can be any Standard type



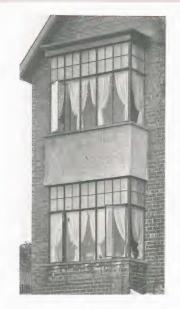
THE CRITTALL MANUFACTURING CO. LTD., BRAINTREE

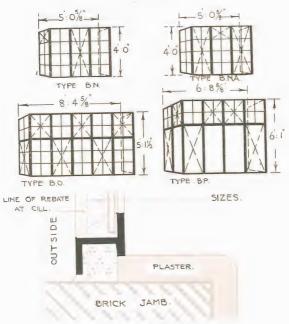
CIRCULAR BAYS



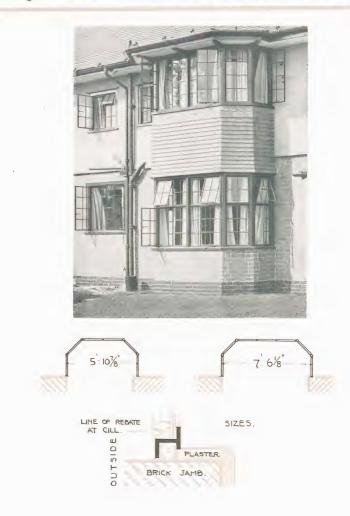


SQUAREBAYS





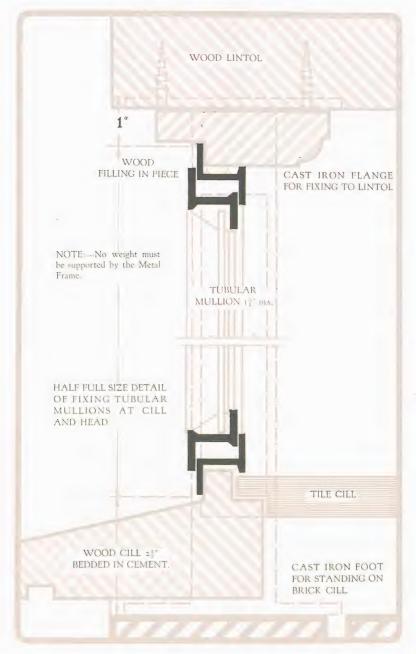
SQUARE-SPLAYED BAYS



ORIEL WINDOWS



HEADS, LINTOLS, AND CILLS FOR BAY WINDOWS



STANDARD METAL WINDOWS

INWARD OPENING



SPECIFICATION

WINDOWS are complete with all the necessary fittings and hinges, adjusted ready for use.

Constructed of rolled steel bars hydraulically straightened. All corners welded. Glazing bars of $\frac{3}{4}'' \times \frac{3}{4}''$ Tees intersected by the 'Fenestra' System. All windows prepared for external glazing.

Hung on steel pivots with gunmetal centres and provided with all necessary screws or lugs for fixing.

FITTINGS. Folding casements have espagniolette bolt with steel rods and painted gunmetal handle. Side-hung Casements have malleable iron handle. Bottom-hung Casements have spring catch and quadrant to allow 40° opening. Removable for cleaning.

All windows prepared to receive detachable flyscreens externally, which can be supplied if called

FINISH. Two coats of anti-rust paint.

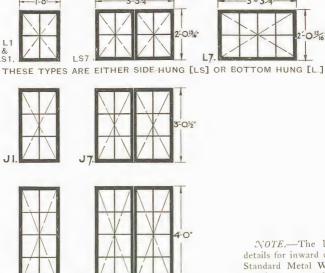


Standard Sizes. Inward Opening.

THE LARDER WINDOW



[The above photograph shows standard window, type L1, to which a gauze flyscreen has been attached. This will be found particularly useful in larders, pantries, dairies, etc.]



XOTE.—The building details for inward opening Standard Metal Windows are the same as for outward opening types.

SIDE HUNG TYPES.

STANDARD FRENCH WINDOWS

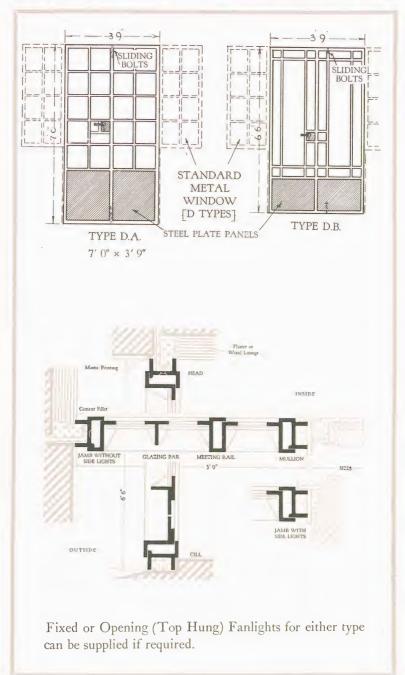


AS a complement to the range of standard size windows described on the foregoing pages we have now produced a Standard French Window, opening outwards, as illustrated above, for use in conjunction with the standard types.

These doors are made in the folding type, and are provided with kicking-plates, sliding bolts on both closing leaves, and lock to work from both sides.

The glazing bars in type D.A. line with the glazing bars in the Standard Metal Windows.

FRENCH WINDOWS

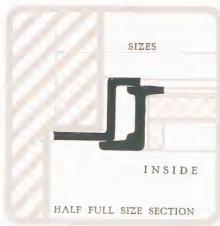


FRONT DOORS

THE door shown here has been specially designed for the main entrance door to a small house. It consists of a steel frame, the upper part of which contains a panel of leaded glass, the lower portion being filled with oak panels.

The door is provided with a mortice lock, and is hung on gunmetal hinges to a steel frame. The necessary fixing lugs are provided.





STANDARD METAL DOORS

FOR LAVATORIES, OUT-BUILDINGS, WASHHOUSES COAL STORES, Etc.

Or any building where constant and heavy usage makes wooden doors unsuitable

SPECIFICATION

THE Outer Frame is made of a joggled flat for fixing to the face of the wall by means of splayed adjustable lugs as shown on the detail given below. The lugs are sent loose with the necessary bolts for attachment, three being provided for each side. Alternatively, the frame may be fixed in the daylight of the brickwork, and finished inside and outside with plaster. In this case straight lugs would be used instead of splayed lugs. Splayed lugs will be sent unless otherwise specified.



An air space of 3'' is provided between the top of the door and the frame to give permanent ventilation.

The Opening frame is made of I × I angle with a stiffening bar across

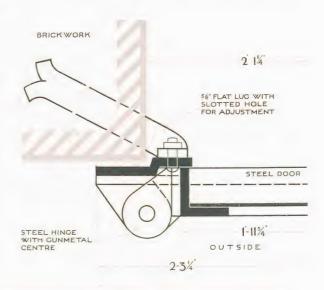
the middle, the panels being of 16 B.W.G. plate welded to the frame.

Hung on three pivot hinges with gunmetal centres and provided with lever handle which can be locked from inside, and padlock cleats.

Overall Size 6'6'' $\times 2'3''$

A lavatory indicator can be fitted as an alternative.

Painted one coat of anti-corrosive paint.



DETAILS REQUIRED WHEN ORDERING STANDARD METAL WINDOWS

- METAL WINDOWS
- I Type. Please quote both letter and number.
- 2. Quantity.
- 3. If fixed in wood frames or direct to masonry.
- 4. Hand. [The hand of a casement is the side on which the hinges are fixed looking from inside.]
- 5. If projecting hinges are required to side-hung portions.
- 6. If with glazing bars or prepared for Lead Glazing (or large sheets of glass).
- 7. If Iron or Gunmetal Fittings are required (Gunmetal Fittings extra).
- 8. If Ordinary Frame (see section, page 5) or Wide Frame (see section, page 11) windows are required.
- 9. Address to which windows are to be sent, and nearest goods station.
 - Printed Order Forms will be sent on request.

IMPORTANT

AS a certain amount of confusion has existed in the past as to the variations of the Standard Metal Window types, the following additional notes should be read in conjunction with the notes on the opposite page, and should be adhered to when ordering.

The symbol numbers given on page 10 are for Standard Metal Windows with glazing bars, and with the ordinary outer frame, thus:



IF required without glazing bars (for sheet glass or lead glazing) this must be mentioned, and for these types the prefix N. is added to the symbol number, e.g. ND.1, ND.4, etc.

If the wider frame section is required, as described on page 11, special attention must be given to the increase in the overall dimensions. For these types the prefix W. is added to the symbol number, e.g. WD.1, WD.4, WND.4, etc.





STANDARD FENESTRA SASHES



Walls of Daylight
Delivered from stock in standard sizes
For every class of industrial building
from outhouse to factory

STANDARD FENESTRA SASHES

SPECIFICATION

GLAZING SIZES

These sashes are made of tee section with Fenestra joints. The glass size for all fixed panes is $18'' \times 12''$, for ventilator middle panes $16\frac{7}{8}'' \times 12''$, and for ventilator side panes $16\frac{7}{8}'' \times 10\frac{7}{8}''$ (see page 54).

MULLIONS

Any number can be coupled together by means of Standard Tee Mullions and Transomes (see page 47).

FITTINGS

The Fittings are in all cases very substantial and suitable for the heavy duty they will be called upon to perform. Rivets are used in preference to screws for their attachment. The horizontal centrehung windows are provided with a push-out pressed steel stay or, alternatively, a brass spring catch, where the former fitting is inaccessible. A malleable iron handle and pressed steel stay are provided for the escape ventilators.

HINGES

The ventilators are horizontally centre-hung on wrought steel pivots with bronze pins. These are easily adjustable so that minor inaccuracies of erection or glazing can be easily corrected.

SPECIAL VENTILATORS

A special range of Side-Hung Ventilators is provided in the Standard type for emergency fire exits. These are provided with projecting hinges to enable them to be cleaned from the inside. A further range of Standard Sashes are provided with Bottom-Hung Ventilators for cases where external projection is undesirable.

All types of ventilators have double contact (two-point) weathering, and as all the attachments of weathering to frames are concealed, there is no danger of corrosion interfering with their proper function.

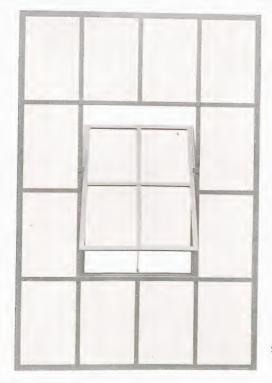
FIXING

The best results are obtained by BUILDING IN, rather than fixing them to finished openings, as besides insuring a sound joint with the surrounding masonry, the sash provides a guide and incentive to the bricklayer. All lugs and bolts are provided for the sashes and mullions.

FINISH

All sashes are painted a priming coat of zinc oxide before despatch, and full fixing instructions are attached to every consignment.

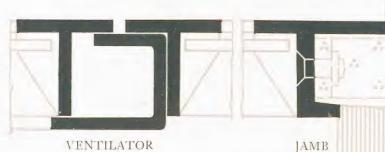
STANDARD FENESTRA SASHES



Typical Standard Fenestra Sash (Type SS 44)

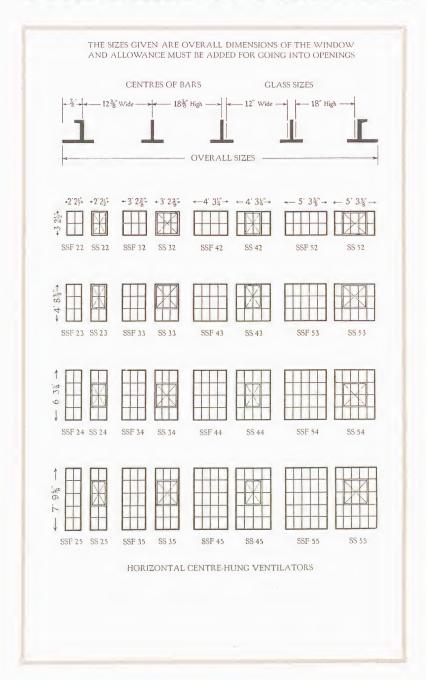
OUTSIDE

SIZES

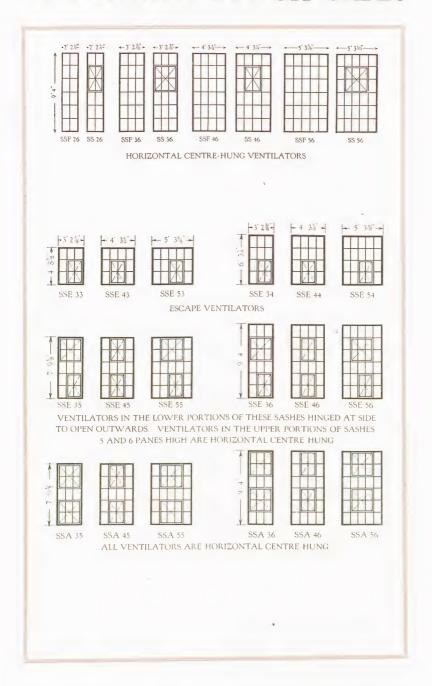


FULL SIZE SECTIONS

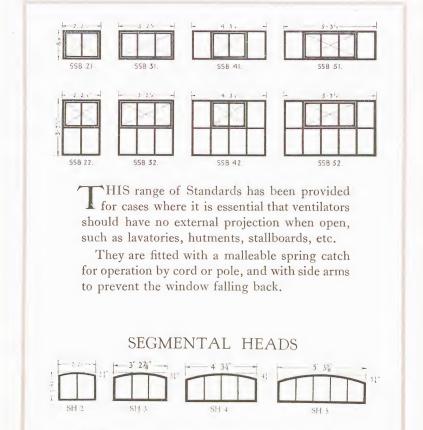
STANDARD STOCK SIZES



STANDARD STOCK SIZES

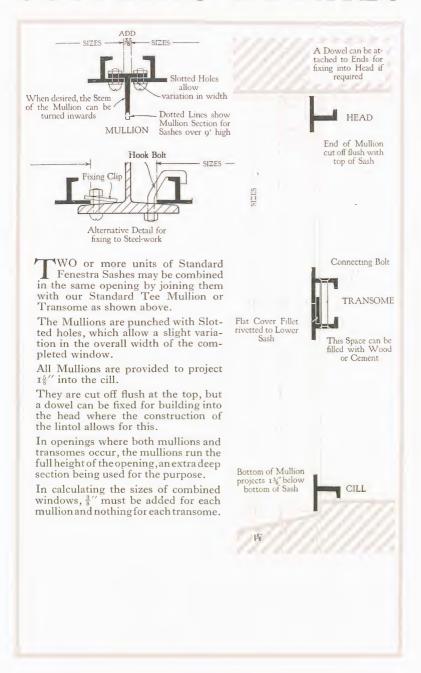


BOTTOM-HUNG VENTILATORS



In certain cases it is often found necessary to construct the heads of window openings as Brick Arches, instead of using lintols of steel or concrete, and the above segmental-headed fixed sashes have been made up for attachment to any of the full range of Standard Fenestra Sashes.

COUPLING DETAILS



HINGES



HINGES

THE hinges provided on horizontal centre-hung ventilators are *inside* the window, 2" above the centre, and securely rivetted to the weathering. By this means the hinge is protected from rust and from the danger of screws working loose.

The hinges are made of wrought steel with gunmetal centres.

CLEANING HINGES

SO that all types of windows may be easily cleaned from *inside* the building, side-hung ventilators are provided with projecting hinges. These provide a space of about 4½" between the sash frame and the ventilator when open, which is sufficient to allow the arm to pass freely.

These hinges are made of malleable iron with gunmetal centres.

No hinges are provided for bottom-hung ventilators, which can be lifted out if required.



CLEANING HINGE ON SIDE-HUNG VENTILATORS

FITTINGS



HANDLE

SIDE-HUNG VENTILATORS

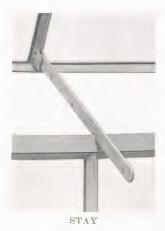
SIDE-HUNG VENTILATORS are provided with malleable iron handle of this pattern. It is of substantial design, securely rivetted to the frame. They are also provided with Push-Out Steel Peg Stay and Tapered Peg. Both Stay and Peg are attached by rivets.



STAY

HORIZONTAL CENTRE-HUNG VENTILATORS

THE STANDARD FITTING for this type of Ventilator is a Push-Out Stay of the pattern illustrated. It is notched to allow the Ventilator to be set open at various positions, and secure fastening is ensured by placing it behind the clip attached to the fixed sash-bar immediately below.

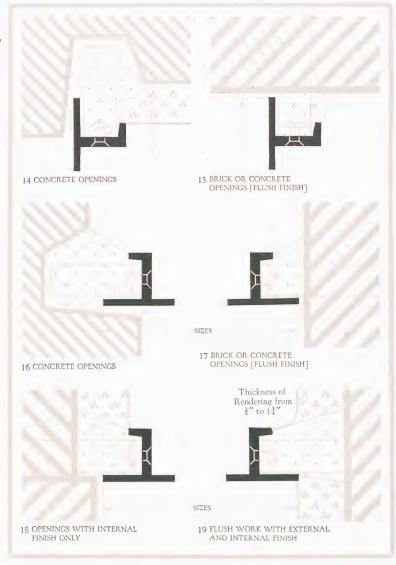


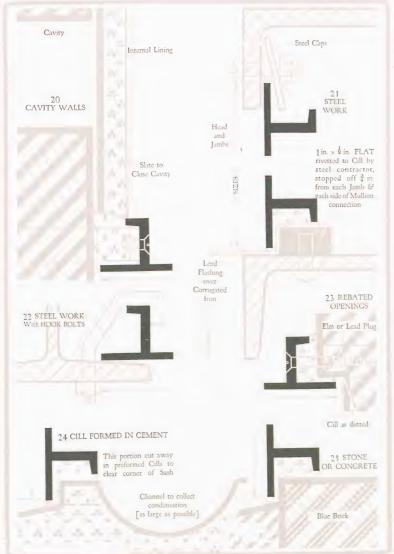
SPRING CATCH

HORIZONTAL CENTRE-HUNG VENTILATORS

IN CASES where the Push-Out Stay cannot be easily reached by hand, Ventilators are provided with a brass spring catch for operation by cords.

The Notes on page 52 should be read in conjunction with these details.





The Notes on page 52 should be read in conjunction with these details.

14 & 16. CONCRETE OPENINGS

Ordinary window openings in concrete can best be prepared with a small continuous groove as shown; this provides an internal rebate in which large sash lugs can be cemented, and does away with the necessity of cutting plug holes which, in the case of reinforced lintols, sometimes interfere with the reinforcement.

15 & 17. BRICK OR CONCRETE OPENINGS (FLUSH FINISH)

Where ordinary brick openings are used, it is not usual to attempt to form any check or rebate at the head or jambs; quite sufficient stop is provided if the channel is well pointed with cement after fixing, or whilst they are being built in. An additional safeguard is provided if the external joint is raked out and pointed with mastic.

18 & 25. OPENINGS WITH INTERNAL FINISH ONLY

In cases where the internal jambs have to be provided with linings, either in plaster, wood, glazed brick, or other special materials, the frame should be placed in the clear opening and the internal brickwork set back sufficiently to accommodate the internal lining, whatever it may be. The joint between the sash and the masonry is formed with a cement fillet, well tamped into the channel of the sash. Detail No. 25 shows the cill suggested for use in such cases.

FLUSH WORK WITH EXTERNAL AND INTERNAL FINISH Where it is necessary to render the external face of the brickwork, the openings must be kept large enough to provide a space between the sash and the masonry sufficiently wide to accommodate the external rendering. In this case, as in Detail No. 17, the actual joint should be made whilst the sash is being built in with cement. Internal linings, if any, can be finished against this cement fillet.

20. CAVITY WALLS

In cases where sashes are used in cavity wall buildings, they should be fitted in the middle of the outer course, preferably built in as the work proceeds. Owing to the varying sizes of brickwork, it has not been found possible to arrange the lugs to correspond with the joints. The cavity itself can be closed by a piece of slate, and the lining covering this can be cut off in the reveal, if it is not required to finish the internal face of the building.

21. STEEL WORK

Steel Sashes can be easily fixed to steel work, and this detail shows the best application for such buildings, either in corrugated iron or brickwork. In fixing sashes to steel work, it is always advisable to avoid any attempt to make holes in the steel work to correspond with holes in the sash, and the detail shown avoids this. The steel stop shown rivetted to the cill $\frac{5}{8}$ from the outside face, forms an efficient stop, and flashing, in the case of corrugated iron, can be trimmed over this before the sash is applied. It must be stopped off \\$" from each jamb and each side of mullion, to allow side bars of sash to run through.

Detail No. 22 shows an alternative method to the clip shown on the head

and jamb for the steel work of Detail No. 21.

NOTE.—Hook bolts or clips will be supplied in place of lugs when specially

23. REBATED OPENINGS

It is occasionally necessary to fix sashes into framed openings, either in moulded brick, stone, or wood. In such cases, frames should be prepared with a 3" external rebate. The use of wood, however, as a framing, is not recommended. 24 & 25. CILLS

Cills are usually formed after the sash has been built in, by pouring them in concrete. In such cases they can take any form dictated by special requirements. The large groove shown on the internal portion of Detail No. 24 will be found useful where excessive condensation is likely to be experienced. It should be made large enough to hold the maximum amount anticipated, so that it may evaporate during daytime, as attempts to drain this away to the outside are liable to give trouble.

FIXING INSTRUCTIONS

THESE instructions should be read in conjunction with details on pages 50 and 51.

Standard Fenestra Sashes are subject to careful inspection both during manufacture and before despatching. If properly handled during transportation, and erected according to the following instructions, they will operate in an entirely satisfactory manner when installed in the building.

HANDLING AND STACKING

Fenestra Sashes should ALWAYS BE STACKED ON EDGE and never piled one on top of the other. Do not lay the frames flat or drag them along, as rough handling will distort them. INSPECT THE SASHES CAREFULLY before placing in the opening, to be sure that they have not been twisted or bent. Any bars bent in handling can be easily straightened with a hammer. They should be covered up until ready for use.

FOR BRICK BUILDINGS

The best method when Standard Fenestra Sashes are used in brick buildings is to BUILD THEM IN as the work proceeds. This ensures a sound joint with the brickwork and prevents the possibility of misfit. In such cases the sash should be stood in position and plumbed, levelled, and adjusted, and lugs bolted on. The ventilator after being tried to see that it opens and closes properly, should be wired shut. The sash should then be braced and strutted securely. The supports should not be removed until the brickwork has reached lintol height.

In some cases, such as Concrete and Steel Frame Buildings, it is not possible to erect the sash until after the opening is formed.

Care must always be taken to protect the sash from misuse during erection. Sash bars are not intended to support scaffolding or ladders, and will be damaged if so used. Ventilators must be kept shut until ready for glazing.

CILLS

All Cills must be level. If the cill is not level, place a wedge under the corner of the frame. Sashes should be bedded in cement when placed upon cill prior to erection.

In cases where concrete cills are poured AFTER the sash has been built in, care must be taken to see that the temporary blocks on which it rests are under vertical bars running the full height of the sash.

Where cills have been formed to suit sash (see Detail 24) the stool must be cut away at the corner of each sash unit, to clear the ends of the vertical member.

JAMBS

In built openings, be sure that jambs are plumb. Do not force jambs to follow the lines of poor masonry, but be sure that it is free at both sides. In Detail 18, the interior brick opposite each lug should be removed, and lugs cemented after sash has been adjusted.

Be sure in all cases that lugs are free from masonry before cementing

HEADS AND LINTOLS

Standard Fenestra sashes are not designed to carry any load at the head. In placing frames under steel lintols, make allowance of from $\frac{3}{8}$ " for deflection, depending on the width of the opening.

GLAZING AND PAINTING





NET GLASS SIZES

'A' Fixed panes in all types 18" × 12"
'B' Corner panes in all ventilators, except Bottom-Hung ... 16\frac{7}{8}" × 10\frac{7}{8}"
'C' Middle panes in all ventilators 16\frac{7}{8}" × 12"
'D' Corner panes in

Bottom-Hung Ven-

tilators .. $16\frac{8}{8}'' \times 11\frac{8}{8}''$ THE glass rebates on all Standard Fenestra Sashes are $\frac{3}{8}''$ deep, and the sizes given above allow $\frac{1}{8}''$ clearance all round. If the glass is too tight it will split.

The glass is secured by thin pressed metal strips threaded through

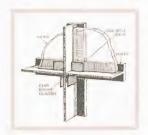
every joint.

These are delivered folded flat against the web.

After the glass has been bedded in, these strips should be folded back against the glass

and the back putty applied.

Never attempt to place glass against the metal rebate; it breaks and lets water through. Spread the rebate with a thin layer of putty, press the glass firmly against it, and trim off from the outside. Allow back putty three or four days to set before the ventilators are opened.



PUTTY AND PAINT

Ordinary glazier's putty is not suitable for glazing metal windows, as the steel frame will not absorb the excessive quantity of oil.

It is necessary to see that only linseed oil is used (in sufficient quantity to allow the putty to be worked without being sticky). A little mastic or red lead mixed with the putty will add considerably to its strength and permanence, whilst the addition of a small quantity of gold size will tend to make it hard, and adhere to the metal surface.

We estimate that 12 ounces of putty are required for every pane. BEFORE APPLYING FINISHING COATS of paint, be careful to see that all rust and dirt contracted during installation are thoroughly removed.

Standard Fenestra Sashes are dipped in zinc oxide paint before despatch, but subsequent handling is liable to remove some of this,

and some rust is bound to follow.

Finishing coats of paint should contain a good body of linseed oil. Care should be taken to see that the sash is quite clean before finishing coats are applied. Do not expect paint to stay upon rust or dirt.

DETAILS REQUIRED WITH ORDERS AND ENQUIRIES

HILST we can generally make prompt delivery of all types of Standard Fenestra Sashes, much delay is frequently caused by lack of information of what is actually required.

All orders must be accompanied by the following

information:

- 1. Quote Detail Number of Fixing Details as shown on pages 50 and 51, particularly noting where dimension points are shown.

 If none of these details meet the case, a sketch should be sent showing preparation of work at head, cill, and jambs.
- 2. Number of each type required.
- 3. Quote Standard Type Numbers as given on pages 44, 45, and 46.
- 4. In Horizontal Centre-Hung Ventilators, whether push-out stay or spring catch is to be fitted.
- 5. Whether mullions are to be cut to suit steelwork, and, if so, how much. Standard mullions are cut 15/8 in. long at cill and flush at head, and will be so furnished unless otherwise specified.
- 6. State the nature of building for which the sashes are required.
- 7. Name of person to whom goods are to be invoiced, and full shipping directions.

OFFICES AND PARTITIONS



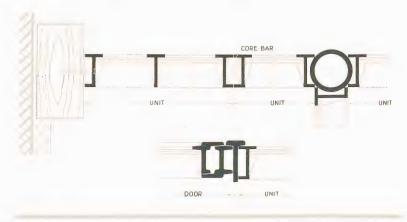
Typical Installation of Steel Partitions in a modern office building (Note the use of Standard Metal Windows, C2, E2)

AS a means of subdividing offices, stores, and factories, glazed metal screens have the great advantage over wood in that they can be easily removed and re-erected without suffering any damage.

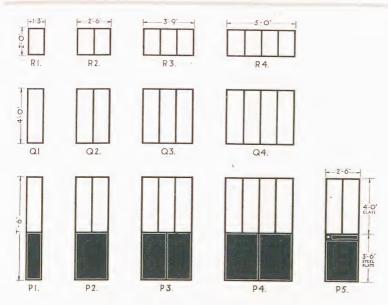
Further, they are considerably cheaper than wood partitions, offer less obstruction to light, are fireproof and occupy a minimum space.

Ever since we first standardized these panels there has been a constantly increasing demand, and we have now revised and increased the range of sizes so as to make their application more elastic.

Where the units or some of the units do not exactly fill the required space, special filling in pieces can be supplied.



OFFICES AND PARTITIONS



SPECIFICATION

PANELS, made of channel and tee sections as shown, with solid 15 B.W.G. plates welded or rivetted into the lower part.

The upper panes prepared to receive glass from inside, and prepared for wood beads where specified.

Frames drilled for countersunk fixing screws which are sent with each consignment.

Vertical tubular mullions for corner pieces or angular connections can be supplied if desired.

DOORS, made of Medium Universal Section, hung on gunmetal hinges to open inwards. Provided with a substantial mortice lock and lever to operate from both sides.

FIXING. The most suitable method of fixing standard metal partitions is to screw them to wood plugs, or preferably, to a continuous wood curb fixed to the wall or ceiling.

GLASS SIZES

Туре	Quantity	Size	Type Quantity	Size
Rı	One piece	$22\frac{15}{16}'' \times 13\frac{15}{16}''$	Q 4 Four pieces	$46\frac{15}{16}'' \times 14\frac{1}{2}''$
R 2	Two pieces	$22\frac{15}{16}'' \times 1 + \frac{5}{16}''$	P 1 One piece	$47\frac{5}{16}'' \times 13\frac{15}{16}''$
R 3	Three pieces	$22\frac{15}{16}'' \times 14\frac{1}{2}''$	P 2 Two pieces	$47\frac{5}{16}'' \times 14\frac{5}{16}''$
R+	Four pieces	$22\frac{15}{16}'' \times 14\frac{1}{2}''$	P 3 Three pieces	$47\frac{5}{16}'' \times 14\frac{1}{2}''$
Qı	One piece	$46\frac{15}{16}'' \times 13\frac{15}{16}''$	P 4 Four pieces	$47\frac{5}{16}'' \times 14\frac{1}{2}''$
Q 2	Two pieces	$46\frac{15}{16}'' \times 14\frac{5}{16}''$	P 5 Two pieces	$46\frac{3}{8}'' \times 13\frac{3}{8}''$
Q 3	Three pieces	$46\frac{15}{16}'' \times 14\frac{1}{2}''$		

FENESTRA INSTALLATIONS



Low Temperature Laboratory, Cambridge University.

Architect: F. W. Troup

CRITTALL FENESTRA SASHES HAVE BEEN INSTALLED IN THE LATEST NEW BUILDINGS AND EXTENSIONS OF THE FOLLOWING WELL-KNOWN FIRMS:

Allen & Hanbury's Ltd.,

Bethnal Green, E.

Amalgamated Press Ltd.,

Sumner Street, S.E.

Anglo-American Oil Co. Ltd.,

various branches.

Bombay Port Trust, Bombay. Boots Cash Chemists Ltd.,

various branches.

Bovril Limited, various branches. Bradbury, Wilkinson & Co. Ltd.,

Raynes Park, S.W. British Petroleum Co. Ltd.,

Hackney Wick, E.

Cadbury Bros. Ltd., Bournville. A. J. Caley & Son Ltd., Norwich. Courtaulds Ltd., various branches

Crompton & Co. Ltd., Chelmsford.

Henry Ford & Son Ltd., Cork.

Freia Chocoladefabrik.

Christiania.

Harrods Ltd., various branches. Howe Bridge Spinning Co. Ltd.,

Atherton.

J. Lyons & Co. Ltd.,

various premises.

Mac Fisheries Ltd., Fleetwood. Mappin & Webb Ltd., Sheffield.

Marconi Wireless Stations,

various.

Navy, Army, & Air Force Stores, Kennington and Aldershot.

Naval Storehouse,

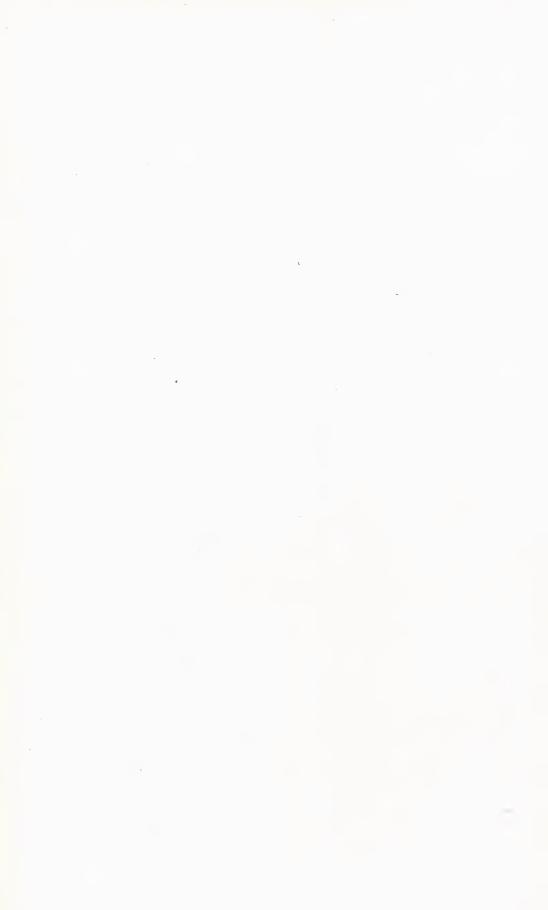
H.M. Dockyard, Rosyth.

W. H. Smith & Sons,

Stamford Street, S.E.

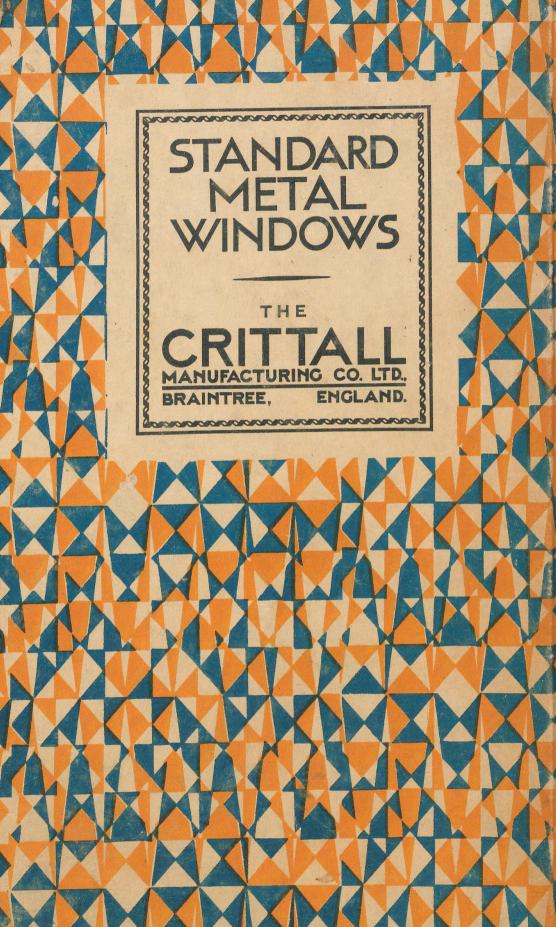
C. A. Vandervell & Co. Ltd.,

Underground Electric Rlwys. Co. of London Ltd., various depots.









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